

REMARKS

This paper is responsive to an Office Action dated June 7, 2004. Prior to this response claims 1-28 were pending. After amending claims 1, 18, 20, and 23-34, canceling claim 5, and adding claims 29 and 30, claims 1-4 and 6-30 remain pending.

In Section 2 of the Office Action claims 23-28 have been rejected under 35 U.S.C. 112, second paragraph as being indefinite. With respect to claim 23, the Office Action states that it is unclear how the ESD is interrelated and associated with the optical region. In response, claim 23 has been amended to recite that the optical region includes an ESD circuit.

With respect to claim 24, the Office Action states that it is unclear what an optical test interface represents. Claim 24 comprises the elements of a "component" and "a first optically sensitive device". The claimed invention specification identifies and explains component 24 in many places throughout the document. For example, component 24 is initially introduced in the description of Fig. 2 on page 9. The component 24 is also described and shown in the context of Figs. 3 and 14. Likewise, the specification identifies and explains optical region 20, which is also called "an optically sensitive device", throughout the specification. For example, optical region 20 is introduced in the description of Fig. 2 on page 9 of the specification. Optical region 20 is also described and shown in the context of Figs. 3 and 14. Claim 20 describes Fig. 3 and Applicant respectfully submits that the meaning of the term "optical test interface" would be understood by a skilled artisan to include the combination of a

component and an optically sensitive device. However, in the interest of having the claim pass through to issue, the claim has been amended to delete the phase "optical test interface."

In Section 3 of the Office Action claims 21 and 25 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Office Action states that the specification does not provide support for the limitations of "introducing the electrical command signal to a second optical region", "converting the electrical command signal to light", "a second optically sensitive device having an input connected to the component output to accept the electrical command signal", and "the second optically sensitive device converting the electrical command signal to a light signal emitted at an output". This rejection is traversed as follows.

The first paragraph of 35 U.S.C. 112 states that "(t)he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and set forth the best mode contemplated by the inventor for carrying out his invention."

Generally, the specification describes optical region 20 as either an input or output region (page 10, ln. 10-11). Beginning on page 10 at line 24, and continuing through page 11, line 13, the specification describes optical regions 40, 42, 44, and 46 (see Fig. 2) as being connected to output components "that may command their corresponding optical regions to emit an optical signal on command". Likewise, in the explanation of Fig. 11, on page 30, at lines 11-13, apertures 174, 176, 178,

and 180 are described that receive optical output from output regions 40, 42, 44, and 46 respectively. The Applicant respectfully submits that a person skilled in the art, reading the specification in light of claims 21 and 25, would recognize anyone of output optical regions 40-46 as a "second optical region" that is connected to the output of a component, and that converts electrical signals to light. Since claims 21 and 25 are enabled by the specification, the Applicant respectfully requests that the rejection be removed.

In Section 5 of the Office Action claims 1-2, 4, 6-7, 18, 20, 22, 24, and 26 have been rejected under 35 U.S.C. 103(a) as unpatentable with respect to Hirt (US 5,448,802) in view of Makki et al. ("Makki"; US 5,216,359). With respect to claims 1, 7, 18, 20, 22, 24, and 26, the Office Action states that Hirt describes optically sensitive devices that are stimulated to exercise components on a die. Makki is introduced to address claim 6.

Regarding claims 1-2, 4, and 6-7, claim 1 as been amended to include allowable subject matter, see the discussion of Section 6 of the Office Action below. Therefore, claims 1-2, 4, and 6-7 should be allowable. Regarding claims 18, 20, 22, and 24, this rejection is traversed as follows.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of

success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

Generally, Hirt describes the use of photosensor cells 20 and 22 to receive light signals. Hirt further states that photosensors are derived from image sensor arrays with color filters that respond to particular colors (col. 2, ln. 1-41).

Hirt states that "(b)y using a different color filter for each photosensor, multiple photosensors can be placed on an IC die wherein each of the photosensors respond to mutually exclusive wavelength ranges, which may include both visible and non-visible light ranges" (col. 3, ln. 52-57). Further, Hirt states that "FIG. 5 shows a view of an IC die that employs multiple spectrally independent photosensors. The photosensors may be dispersed throughout the IC to provide multiple test inputs. For one embodiment, there are several sets of spectrally independent photosensors, each set having a particular color filter" (col. 4, ln. 32-38).

To further clarify the claimed invention, claims 18, 20, and 24 have been amended. Claim 18 has been amended to more specifically recite that the optical region is an ESD protection circuit. Claims 20 and 24 have been amended to incorporate the limitation that the optical regions may be selectively activated.

With respect to the first *prima facie* requirement, there is no motivation to modify the Hirt reference in such a way as to make claimed invention obvious. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the

prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

With respect to claim 18, Hirt does not suggest using ESD circuitry to generate an electrical signal from an optical input. Rather, Hirt advances a testing principle based upon the use of light colors. To advance that end, Hirt must use photosensors. As noted above, photosensors are fabricated with color filters. Hirt cannot use ESD circuitry, as ESD circuitry (back-to-back) diodes do not distinguish between colors. Alternately stated, Hirt's device could not distinguish between different colors (different inputs) if he used ESD circuitry.

With respect to claim 20 and 24, as mentioned above, Hirt distinguishes between input signals by using color filters to differentiate between color inputs. However, all of Hirt's photosensors are activated, at all times. Meaning that Hirt cannot selectively supply a power supply voltage to a just a sub-group (less than all) of photosensors on the die. Unlike the claimed invention, Hirt does not selectively activate particular optical regions prior to optical stimulation. Alternately stated, Hirt can selectively test photosensors by selecting a particular color of light, but he cannot selectively activate, making particular photosensors ready for test.

Further, the Office Action has not demonstrated that the modification of the cited the prior art reference points to the reasonable expectation of success in the present invention, which is the second requirement of the obviousness analysis. There is no expectation from reading Hirt's specification that color-sensitive optical regions can be enabled using a conventional ESD circuit, or that his photosensors can be selectively activated.

With respect to the third requirement to support a *prima facie* case of obviousness, Hirt does not teach or suggest every element of the claimed invention. With regard to claim 18, Hirt does not describe an ESD protection circuit. With respect to claims 20 and 24, Hirt does not describe a means for selectively activating photosensors. Therefore, Hirt neither suggests nor explicitly describes the inventions of claims 18, 20, and 14. Claim 22, dependent from claim 20, and claim 26, dependent from claim 24, enjoy the same distinctions and the Applicant requests that the rejections be removed.

Section 6 of the Office Action states that claims 5 and 8-10 would be allowable if rewritten in independent form, including all the subject matter of the base and intervening claims. In response, claim 1 has been amended to include the subject matter of claim 5. Therefore, all claims dependent from claim 1 should now be allowable.

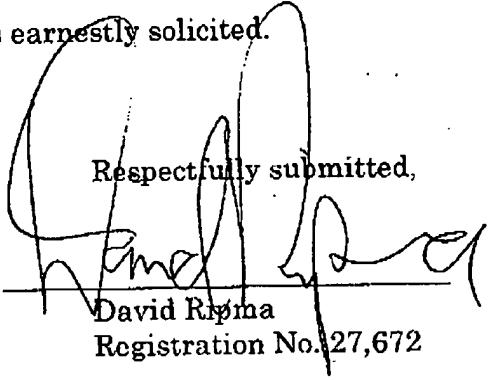
New claim 29 was added, reciting the subject matter of claim 8 (combining claims 1 and 8). New claim 30 was added, reciting the subject matter of claim 9 (combining claims 1 and 9).

Section 6 of the Office Action also states that claims 11-17 and 19 are allowed.

It is believed that the application is in condition for
allowance and reconsideration is earnestly solicited.

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Respectfully submitted,


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